



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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September 21, 2011

Marisue Hilliard
Forest Supervisor
National Forests in North Carolina
160 Zillicoa Street, Suite A
Asheville, NC 28801

**RE: Uwharrie National Forest, Proposed Land and Resource Management
Resource Plan, Implementation, Montgomery, Randolph and Davidson Counties,
NC
CEQ Number: 20110192**

Dear Ms. Hillard:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the subject Uwharrie National Forest, Proposed Land and Resource Management Resource Plan, Implementation, Montgomery, Randolph and Davidson Counties, NC. The US Forest Service (USFS) is the lead federal agency for the proposed action.

This Draft Environmental Impact Statement (DEIS), prepared by the USDA Forest Service, describes three alternatives for managing the land and resources of the Uwharrie National Forest (NF). The USDA Forest Service proposes to revise the 1986 Land and Resource Management Plan (the 1986 Plan) for the Uwharrie National Forest. The Proposed Plan updates the goals and desired conditions, objectives, standards and guidelines, and monitoring requirements. In addition, the proposal includes designating or recommending for designation numerous new Special Interest Areas. New management direction is focused primarily around three themes: 1) Restoring the forest to a more natural ecological condition; 2) Better managing heritage resources; and, 3) Providing outstanding and environmentally friendly outdoor recreation opportunities with excellent trails and facilities.

The following concerns were expressed during a comment period that took place following publication of a Notice of Intent to revise the plan in the spring of 2010. They were addressed either by clarifying or changing language in the Proposed Plan, modifying management area prescriptions in the Proposed Plan, or by developing an alternative to the Proposed Plan.

- (1) The need to clarify management near streams.
- (2) The need to clarify that the OHV trail system would be open to full-size OHVs.
- (3) The need to develop an alternative that continues current policy for equestrians.
- (4) The need to provide special management for potential exemplary longleaf pine stands.

ALTERNATIVES CONSIDERED

Three alternatives for revision of the Land and Resource Management Plan (LRMP) for the Uwharrie National Forest are described and compared in this Draft Environmental Impact Statement (DEIS). Alternatives A, B, and C were analyzed in detail in this DEIS. Alternative A represents the current LRMP and is also referred to as the 1986 Plan. Alternative B is the alternative preferred by the Forest Service and is the foundation for the Proposed Plan available for review concurrently with this document. The preferred alternative would guide all natural resource management activities on the Uwharrie NF for the next 15 years; would address new information and concerns raised since the 1986 Plan was published; and would meet objectives of federal laws, regulation, and policies. Alternative C is a variation of Alternative B developed to address an unresolved issue with equestrian use of the national forest.

POTENTIAL EFFECTS ANALYSIS OF ALTERNATIVES

BOTANICAL RESOURCES

Alternatives B and C both emphasize restoring the forest to a more natural ecological condition as a primary theme. Through restoration of native ecosystems, native plant communities would be encouraged and restored across the Uwharrie NF. An emphasis on the creation of woodlands and open prairie conditions would benefit sun-loving plant species such as the federally endangered Schweinitz's sunflower. Compared to Alternative A, the greater amount of prescribed fire proposed with Alternatives B and C would provide additional benefits to fire dependent plant species and communities that may have decreased due to historic fire suppression.

NON-NATIVE INVASIVE PLANT SPECIES

Alternatives B and C both include objectives to eliminate non-native invasive plants on a minimum of 100 acres annually. Alternative A does not specifically address non-native invasive plants and would therefore result in a greater potential for new and existing infestations to adversely affect native plant communities.

WILDLIFE

The restoration of native longleaf pine and oak-hickory ecosystems that is proposed in Alternatives B and C would positively affect all native wildlife species on the Uwharrie NF. While Alternative A would create somewhat more early successional habitat than Alternatives B and C, it does not restore other wildlife habitats to the extent of Alternatives B and C.

Alternatives B and C call for restoration of hard mast producing oak-hickory forests and longleaf pine woodlands associated with a number of sensitive and locally rare species on the national forest. Increased prescribed fire proposed in Alternatives B and C would help maintain these habitats.

AQUATIC WILDLIFE

Alternative A, the 1986 Plan, incorporates measures to protect aquatic resources, including the recognition of riparian resources and the need to restore or enhance aquatic habitats. The Yadkin-Pee Dee Basinwide Assessment Report identifies the Badin Lake area as an area that has been compromised by sediment or chemical pollutants, and where biological indices reflect the loss of species or groups of species. It is likely the intense and growing recreation use, including the huge number of unimproved streams crossings on the many miles of trails in the area have contributed to the sediment issue. Without remediation, these declines in stream health would continue, potentially jeopardizing the sustainability of the healthy aquatic ecosystem in the Badin Lake area. Alternatives B and C propose several measures to maintain, protect, and conserve aquatic resources. Maintenance of forested habitats and intact riparian areas would retain quality habitat for all aquatic species. Restoration of native forest communities, such as longleaf pine and oak woodlands would provide subtle habitat improvements for aquatic species, but the greatest effect would be from the maintenance of intact, functioning stream and riparian systems. Restoration activities proposed in areas where existing uses or historic mining have degraded stream habitats (largely through sedimentation, but also loss of pool habitat and functioning riparian areas) would, over the life of the plan, improve habitat for crayfish species by returning stream conditions to a more stable, functioning condition.

In addition, Alternative B has a goal for equestrian use to occur only on a designated system of roads, trails, and areas. Designing and implementing a sustainable system could reduce sediment coming from the trails currently in use. This should improve aquatic habitat more than Alternatives A or C.

FOREST HEALTH

Due to the emphasis in Alternatives B and C on removing loblolly plantations and restoring longleaf pine and oak/hickory communities, long term results from these alternatives would be a forest that is less susceptible to insects and diseases compared to Alternative A.

AIR QUALITY

Alternatives B and C call for more prescribed burning than Alternative A and they also place emphasis on growing season burning. Increased prescribed burning would result in more particulate matter entering the air, and more growing season burning could result in additional ozone formation. Therefore Alternatives B and C could have more impact on air quality than Alternative A. However any increase that occurs is not expected to be great enough to violate existing air quality standards.

SOILS

Impacts from compaction, erosion, land use changes and changes to nutrient cycling would be greatest for Alternative A followed by Alternative C. Alternative B would have the least potential for impacts. Loss of productivity would occur from a greater amount of road construction in Alternative A than in Alternatives B and C, which also have the potential for gains in productivity from road obliteration. Alternative B and C have more prescribed burning than Alternative A, which could impact the organic layer and could require more fire line construction. However more prescribed burning could reduce the risk of lost productivity from catastrophic wildfire.

WATER RESOURCES

Alternative A calls for more timber harvest and related activity than Alternatives B or C and would therefore have more potential for impacting water resources from these activities. Alternatives B and C would have a greater potential to adversely impact hydrologic conditions on the watersheds from prescribed burning compared to Alternative A; however, the amount of impact is expected to be very minor. Severely burned areas would generally be small patches distributed throughout the burn area in areas where the fuels were the most concentrated, and basically mimicking natural fire effects. Alternative B proposes a goal to move towards designated systems of roads, trails and areas for equestrians and mountain bikers that would provide some management control over where these users camped. With equestrians and mountain bikers restricted to designated systems there would be fewer impacts from dispersed primitive camping. With Alternative B all trail uses except for hiking would eventually be on designated systems that would strive for and work towards proper design, location, lay out, and construction techniques so the trail systems are sustainable and minimize their impacts to soil, water and aquatic resources. Alternative A calls for approximately two miles of new road construction each year, whereas Alternative B and C do not call for road construction and state as a goal, "there is little evidence of new road construction." Alternatives B and C also call for eliminating all unauthorized roads on the Uwharrie NF over the course of the planning period. Alternative A has no such stipulation. Therefore, with Alternatives B and C the impacts to water resources from roads, in particular unauthorized roads, should be reduced over time.

In summary, Alternative B would result long term in the least adverse impacts and most potential for improving water quality, followed by Alternative C, with Alternative A being the least favorable to water resources.

CLIMATE CHANGE

Climate change may result in an increase in frequency of intense storms, an increase in wildfire risks, and an increase in outbreaks of insects and diseases. By restoring native longleaf pine woodlands and oak-hickory forests where loblolly and shortleaf pine plantations currently exist, Alternatives B and C would result in a national forest less vulnerable to the effects of climate change than Alternative A. Alternative A, which perpetuates the current forest conditions, would provide an environment more susceptible to wind throw and insect and disease outbreaks. Also, Alternatives B and C establish a new streamside management area and new

guidelines place restrictions on trail construction close to streams, thus lessening the potential for storm events to result in increased sedimentation from trails.

ROADS

Alternative A anticipates approximately 2 miles of system road construction per year and does not call for obliteration of unauthorized roads. Alternatives B and C do not anticipate new system road construction and proposes obliteration of all unauthorized roads over the life of the plan. Therefore, Alternative A would provide more motorized access to the forest than Alternatives B and C. However, since the potential for road maintenance remains the same for all alternatives, Alternative A would likely result in more of a road maintenance backlog, and poorly maintained roads could have other impacts, including more potential for stream sedimentation.

EPA COMMENTS AND RECOMMENDATIONS

GENERAL RECOMMENDATIONS

EPA remains concerned about the long-term sustainability of forest ecosystems of the Southern United States, specifically related to the environmental effects of loss of natural forests and increased rate and geographic extent of timber harvesting in the South.

The Southern Forest Resource Assessment has identified several notable trends in Southern forests, particularly the projected increase in forest management intensity (e.g., increase in pine plantations) and conversion of native forest ecosystems. Potential biological impacts from these actions include loss of habitat, reduction of biodiversity, stream sedimentation, endangered species impacts and wetland impacts.

Better integration of findings across issues/chapters must occur as an important next step in the process of understanding the overall sustainability of Southern forests and forest-dependent resources (e.g., how could the projected increase in pine plantations and management intensity affect overall water quality, quantity, wetlands, or wildlife habitat in the South?).

The integration of findings should lead to the identification of potential smaller areas of concern related to forest sustainability issues. These areas should be identified and commitments made for sustainable management.

FORESTS AND WATER QUALITY

EPA recommends reducing the nonpoint source pollution of surface and ground waters that can result from forestry activities. These activities include but are not limited to:

- Tracking the implementation of best management practices (BMPs) used to control nonpoint source pollution generated by forestry practices.

- Developing water-quality monitoring plans to evaluate the effectiveness of forestry BMPs in meeting water-quality goals or standards.

Design of monitoring projects and the selection of variables and methods to correlate BMP implementation with changes in stream water quality.

Providing information on methods for sample site selection, sample size estimation, sampling, and result evaluation and presentation. The focus is to develop statistical approaches needed to properly collect and analyze data that are accurate and defensible. A properly designed BMP implementation monitoring program can save both time and money.

EPA will continue to strengthen its support for Federal and State efforts to implement the nonpoint source (NPS) total maximum daily load (TMDL) program. Nonpoint source TMDLs, together with watershed-based plans designed to implement the NPS TMDLs, provide the necessary analytic link between actions on the ground and the water quality results to be achieved.

EPA believes that improving the integration of NPS TMDLs and watershed plans to implement these NPS TMDLs will provide the most effective means to accelerate achievement of water quality standards.

EPA supports management of National Forests for multiple-use activities that place less emphasis on traditional harvesting and other consumptive uses (e.g., mining) and a greater emphasis on recreation and ecosystem enhancement.

EPA recommends overall management of National Forests should place a premium on sustaining the ecological values of healthy forests. This should include:

- Protection of water quality and yield, sensitive groundwater recharge areas, and undisturbed headwaters of streams and public drinking water supplies.
- Greater attention to the negative impacts of logging roads and the value of undisturbed buffer zones along streams and rivers and the designation of wild and scenic rivers.

- Maintenance of soil quality and nutrient stocks that hold the key to current and future forest productivity.

- Conservation of forest biodiversity by reducing forest fragmentation (as a result of clearcuts and roads), avoiding harvest in vulnerable areas such as hardwood or old growth stands and riparian zones, and restoring natural structural complexity to cutover sites.

- Planning at the landscape level (adjoining National Forests) to address broader ecological concerns such as biodiversity, watershed maintenance and restoration, and forest fragmentation.

- Recognition of climate-related stresses as well as damage from ground-level ozone, acid rain, and acidification of soils and watersheds.

EPA recommends that ecological and other environmental values should be the primary, driving factors in the identification, protection, and management of roadless areas in the National Forests.

SOIL AND NUTRIENT CYCLES

Soil quality is central to sustainable forest management because it defines the current and future productivity of the land and promotes the health of its plant and animal communities (Doran and Parkin 1994). A great deal is known about the importance of soil quality for the functioning of forest ecosystems and also how management practices affect soil quality (eg., Cole 1995 and Perry and Rose 1998). Although very little research has been published on systems for evaluating or monitoring soil quality, defining it and initiating programs to evaluate its maintenance and promotion are central to achieving demonstrable sustainability in our National Forests. The ability to define and measure soil quality is important for applications at a number of scales, from monitoring soil compaction and nutrient supply at specific sites to addressing global concerns about the amount of carbon sequestered in the wood of the world's forests.

Another major factor in sustaining soil quality is maintaining pools of essential plant nutrients and assuring these are steadily available in forms that plants can use. Undisturbed forests seldom experience significant losses of nutrient stocks. Thus an important element in sustainable forestry is taking care that management practices do not result in long term reductions in a forest's nutrient capital or in the long-term availability of those nutrients to plants.

Until recently, nitrogen has been considered the most important nutrient limiting tree growth in temperate and boreal forests, and by far the majority of research has focused on nitrogen losses associated with timber harvest and site preparation (Johnson 1992). Losses from a harvested site take three forms: removal of the nitrogen contained in the harvested wood, nitrogen leached and eroded from disturbed soil, and nitrogen volatilized and lost to the atmosphere during slash burning. The extent and impact of these losses vary depending on numerous site-specific factors such as nitrogen availability and climate and also on management practices (Cole 1995). In the nitrogen-poor forests of the western U.S., for example, losses in wood removal and slash burning far exceed those in leaching, while in more nitrogen-rich eastern forests, leaching losses can be quite high. Watershed-scale studies and harvesting experiments show that total nitrogen lost from a site after clear cutting varies widely among forest types. Since nitrogen is considered the major nutrient limiting tree growth in most systems, postharvest losses are regarded as a long-term threat to forest productivity.

Nitrogen losses in the form of nitrate leached from soils to streams are especially variable from one forest to another. Elevated nitrate levels in streams following harvest or forest disturbance represent a threat to water quality because nutrient fouling can lead to a wide range of problems from algal blooms, loss of oxygen, and fish kills to degradation of drinking water. In general, forest ecosystems with higher levels of nitrogen mineralization (release of nitrogen from decomposing soil organic matter) have been shown to exhibit higher rates of nitrate production and loss, and these losses are further increased by the removal of trees and corresponding

elimination of nitrogen uptake by the trees. (Hibbert 1969, Likens et al. 1970, Hornbeck et al. 1996).

Computer modeling of nutrient requirements for forest growth as well as studies on watersheds and forest ecosystems agree that, in principle, harvesting whole trees and using short intervals between harvests on a site lead to significant reductions in soil nitrogen stocks, nitrogen availability, and productivity. Large losses of phosphorus, calcium, magnesium, potassium, and other nutrients also occur in association with whole-tree harvest and short rotations (Kimmins 1977, Smith et al. 1986, Johnson and Todd 1987). Some practices used to clear logging slash and prepare sites for planting significantly impact soil fertility, especially the use of heavy equipment to push slash and other organic matter into piles, a practice called windrowing (Powers et al. 1990).

EPA recommends a sustainable forest management program regulating rates of tree removal and other management activities planned according to nutrient budgeting techniques in order to reduce or deter long-term degradation of soil nutrients.

HYDROLOGY

The headwaters of the nation's largest rivers, which supply much of our fresh water, originate on National Forest land. Cutting of timber in these watersheds raises three concerns: changes in the volume of water flowing to streams, timing of those flows, and water quality, especially sediment loads.

FOREST FRAGMENTATION

Extensive clear cutting has resulted in the fragmentation of many forested ecosystems into smaller patches that have more forest edge exposed to open, cutover habitats (Harris 1984). The effects of such fragmentation on forest remnants include changes in the microclimate (Chen et al. 1995), in species composition, and in species behavior. Changes in species composition may include loss of some species as a result of unsuitable forest microenvironment, competitive interactions with species at the forest edge, or insufficient total foraging habitat. The change in microclimate at the forest edge may also affect seed dispersal, movement of flying insects, decomposition rates, and size of plant and animal populations.

EPA recommends forest managers examine the effects of fragmentation on a species-by-species basis with emphasis placed on imperiled species and also "keystones" species that play a disproportionately vital role in an ecosystem relative to their abundance and whose removal has large ripple effects on other plants and animals as well as on ecological processes.

To reduce the impact of timber harvesting on biodiversity, EPA recommends forest management consider the mosaic of forest patches on the landscape and the connectedness of habitat for forest species in planning future cuts.

ENVIRONMENTAL JUSTICE

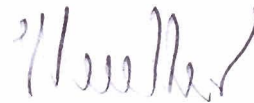
EPA recommends that an EJ evaluation be conducted for all communities within a reasonable radius of the study area outside of the Uwharrie National Forest. The EJ study should include more than just demographics and should include interviews with the potentially affected communities.

CONCLUSION

We rate this document EC-1 Environmental Concerns; We have concerns that the proposed action identifies the potential for impacts to the environment that should be further avoided/minimized. Based on the information provided in the DEIS, Alternative B, the preferred alternative, with consideration of additional Best Practices, would appear to be the best approach.

We appreciate the opportunity to review the proposed action. Please contact Ken Clark at (404) 562-8282 if you have any questions or want to discuss our comments.

Sincerely,

A handwritten signature in blue ink, appearing to read "Heinz J. Mueller", with a stylized flourish at the end.

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management